Coleman's Creek TMDL Implementation Plan Narrative
Appling and Wayne Counties, Georgia

Introduction

Coleman's Creek has been listed as an impaired water body on the State of Georgia's 303(d) list of impaired waters. Because of the recent drought, Coleman's Creek has become an intermittent stream. The lack of consistent water flow and the resultant high water temperatures of remaining pools of stagnant water have no doubt contributed to water quality problems, especially lower dissolved oxygen and high fecal coliform levels. While such conditions do raise local concerns about the true nature of water quality issues surrounding Coleman's Creek, there is no question that there is a local desire to do what is necessary to better the water quality. The TMDL Implementation Plan concentrates on educating the public about non-point sources of water pollution and encouraging the use of best management practices at the agriculture, forestry, and urban and residential levels. Reduction of oxygen depleting materials entering Coleman's Creek by 13% will make for better water quality regardless. A reduction in bacterial loading of 92% will significantly improve the quality of water. A more involved and in-depth monitoring program can also help better define the issues and resolve any local concerns.

Background and Purpose

Coleman's Creek, lying in Appling and Wayne counties, is in the Upper Satilla River Basin and is a tributary to Big Satilla Creek, which eventually flows into the Satilla River in Brantley County. A 17-mile impaired segment begins approximately two miles south of the City of Surrency and eventually runs into Big Satilla Creek, which flows along the Appling and Bacon County lines. Coleman's Creek is currently listed on the 303(d) list in the State of Georgia for violating the water quality standard for dissolved oxygen and fecal coliform.

Adequate dissolved oxygen in water, which derives from direct absorption from surrounding air, from aeration, and from plant photosynthesis, is necessary for good water quality, and to provide for aquatic life. It is an excellent indicator of the health of a water ecosystem. Organic material such as animal wastes, fertilizer, plants, and other wastes, which enter a body of water causing algae growth, tends to lower oxygen levels as it dies and decomposes. The amount of oxygen that dissolves in water is also limited by water temperature. The warmer the water, the lower the amount of dissolved oxygen it can hold. Oxygen is essential for fish, invertebrate, plant and aerobic bacteria respiration. Dissolved oxygen levels below 3 ppm are harmful to most aquatic life.

The presence of fecal coliform bacteria in aquatic environments indicates that the water has been contaminated with the fecal material of man or other animals. At the time this occurred, the source water might have been contaminated by pathogens or disease producing bacteria or viruses, which can also exist in fecal

material. Some waterborne pathogenic diseases include typhoid fever, viral and bacterial gastroenteritis and hepatitis A. The presence of fecal contamination is an indicator that a potential health risk exists for individuals exposed to this water. Fecal coliform bacteria may occur in ambient water as a result of the overflow of domestic sewage or non-point sources of human and animal waste.

The U.S. Clean Water Act requires a TMDL, or Total Maximum Daily Load, to be established for each pollutant in every body of water on the 303(d) list. A TMDL is a calculation of the maximum amount of pollutant, from both point and non-point sources, that a water body can receive and still adhere to the minimum water quality standard developed by the State of Georgia. The United States Department of Interior-Geological Survey (USGS) and the Georgia Environmental Protection Division (GAEPD) gathered samples from the creek beginning in January of 1998 through December of 1998 measuring the level of dissolved oxygen. In a report given on February 21, 1999, the dissolved oxygen level for 1998 was not in compliance with the daily average of 5.0mg/l and no less than 4.0mg/l at all times for waters supporting warm water species of fish that are state regulated. The GAEPD also tested samples from the creek from January to December of 1998 to detect the level of fecal coliform. For the months of May through October, fecal coliform should not exceed a geometric mean of 200 counts per 100ml on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. In the months of November through April, fecal coliform should not exceed a geometric mean of 1000 colonies per 100ml, based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours, and not to exceed a maximum of 4,000 colonies per 100ml for any sample. The data gathered indicated two exceedances of fecal coliform levels during the months of May through October geometric mean standard of 200 colonies per 100ml. In 2000, the 17-mile segment of Coleman's Creek was placed on the 303(d) list.

The purpose of this implementation plan is to identify the actions that must be taken in the future to raise the level of dissolved oxygen in the creek by reducing the amount of oxygen-hindering materials entering the stream by 13% by 2012. Also, the implementation plan's purpose is to identify those actions that need to be utilized in the future to reduce bacterial loading by 92% by 2012. This should improve the water quality and better enable Coleman's Creek to meet the state water quality standards.

Plan Preparation

The implementation plan was developed by the Heart of Georgia Altamaha RDC with the assistance of a watershed committee comprised of stakeholder representatives from the forestry industry, agriculture, the Georgia Forestry Commission, the Altamaha Soil and Water Conservation Committee, Cooperative Extension Service, the Seven Rivers R C & D, the NRCS, a river activist group, a County Manager, a City Manager, and the local president of Farm Bureau. The Heart of Georgia Altamaha RDC was in charge of drafting the

plan under a contract signed with the GA EPD to prepare a TMDL Implementation Plan. A preliminary copy of the plan and planning process was discussed and a presentation was given at the initial watershed committee meeting on October 21, 2002 at the Heart of Georgia Altamaha RDC. Along with the watershed committee, landowners with 500 acres or more of property within two miles of either side of the creek were invited to attend this initial committee meeting to give comments.

A meeting to educate the public and receive further stakeholder input by discussing and reviewing the draft plan with a presentation took place at the Community Center in Baxley, GA on November 4, 2002. At this meeting, any landowners who owned 25 acres or more of property within two miles of the creek were sent a letter informing and inviting them to the public meeting. About 50 persons attended this meeting. Public comments were solicited and input was placed into the plan. The plan addresses the steps that will be taken in the future to improve the water quality standard. The plan provides for monitoring and implementation actions to achieve goals submitted on the TMDL. A draft of the final plan was mailed to the watershed stakeholder committee on November 8, 2002, for solicitation of comments before final submittal to EPD.

TMDL Data and Potential Sources of Pollution

In January 1998, the USGS and the GAEPD began a follow-up sampling and monitoring study as a part of a five-year River Basin Planning cycle (Georgia EPD). The data was gathered on a monthly basis through December 1998. Nineteen measurements were taken during the course of the year in Coleman's Creek at County Route 185 (USGS ID No. 22274285). The minimum level of dissolved oxygen measured was 0.3 (mg/L). The maximum level of dissolved oxygen measured was 8.9 (mg/L). The mean of the nineteen measurements was 5.0 (mg/L). Also in January 1998 at County Route 185, GAEPD (Site 07024691) tested and found two exceedances of fecal coliform levels during the months of May through October geometric mean standard of 200 colonies per 100ml. These measurements were recorded and, as a result of the data, Coleman's Creek was placed on the State of Georgia's 2000 303(d) list as a water body that does not support its designated use of fishing. This indicates that, given existing conditions, there is the potential for fish to be unable to survive.

The Coleman's Creek watershed consists primarily of forest and cropland. Of the 46,154 acres that comprise the impaired segment, approximately one-half (50.4 percent) is utilized for forestry purposes. Another 28.3 percent is reserved for cropland. Wetlands and other land uses, including transitional areas, make up another part of the watershed, with minimal areas dedicated to pasture, residential, or urban uses. Non-point sources such as agriculture fertilizer runoff and animal wastes from farming areas, and erosion of sediments were all identified by EPD as possible sources of the dissolved oxygen problem. Non-point sources that relate to land use activities have the most impact on the fecal

coliform level. For example, land application of agriculture manure and grazing animals are primary non-point sources.

Regulatory and Voluntary Measures: Existing and Future

Septic tank ordinances are an effective way to curtail urban and residential runoff. In Appling and Wayne counties, such ordinances are not in effect, although septic tank installations are regulated. It is important that future septic tank regulations, particularly relating to post-construction maintenance, be implemented at the local level. Future use of residential BMPs should also be explored as a practical means of limiting residential runoff. The local Cooperative Extension office can help individual homeowners assess and utilize BMPs through its Home*A*Syst Program.

Public education measures, beginning with the TMDL Implementation Plans and continuing in the future concerning Best Management Practices, are an efficient way to reach the local citizenry. Agriculture BMPs include, but are not limited to, the use of a waste storage structure, conservation tillage, waste storage pond, diversion, fencing, filter strips, stock trails/walkways, stream/shoreline protection, nutrient management, and well protection. Farmers utilize some of the agriculture BMPs currently; however, many do not practice them, and some do not know how to define a BMP. The NRCS and the Seven Rivers RC&D continue to work with farmers by educating them and providing them with the proper resources/information to enable them to install current and future BMPs. Cooperative Extension can also provide individually tailored assistance with BMPs through its Farm*A*Syst Program.

The use of forestry BMPs are becoming more prevalent, however, some foresters continue to ignore forestry BMPs. The Georgia Forestry Commission has and continues to make a conscious effort to educate and monitor BMPs by aerial surveillance. Some forestry BMP categories include, but are not limited to, harvesting in SMZ's, mechanical site preparation, chemical site preparation, fertilization, firebreaks, skid trail stream crossings and road crossings, and logging roads. The State Implementation Committee of the forest industry's Sustainable Forestry Initiative can lend valuable support/assistance.

Dairy farmers have been and will continue to work with the NRCS to develop comprehensive plans to use proper nutrient management techniques. The plans would better the methods that farmers utilize when applying, monitoring and disposing nutrients on a daily basis in order to better implement land use practices. The Georgia EPD is in the process of using these nutrient management plans as a part of an individual permitting process of the dairy/cattle farms. This will control one of the principal identified sources of non-point source pollution in the Coleman's Creek watershed, much like point source.

The cities of Baxley and Jesup regulate planning and zoning within their city limits. However, neither Appling, nor Wayne counties have any planning and zoning regulations in the unincorporated areas. In addition, the City of Surrency, which is located above the headwaters of Coleman's Creek, also does not have any planning or zoning regulations in place. Both counties enforce erosion and sedimentation control measures at the state level, however, there are no erosion and sedimentation measures enforced at the local level, other than in the cities of Baxley and Jesup.

The NRCS is assisting local farmers by installing Nutrient Application Plans on a voluntary basis. These plans are developed to help control nutrient runoff from farms. The plans are effective if they are followed properly, however; because they are on a voluntary basis, there are very few of them. The Agriculture Extension Service is also assisting local farmers by helping them to install Comprehensive Nutrient Management Plans (CNMP). These plans are being developed to control animal waste runoff. The plans are regulatory, but only if the operator has a certain number of animals located on their property. Because the plans only affect a small number of individuals, they are not very effective.

The implementation of Land Use Management Regulations is planned in the future on a county-by-county basis. The regulations will be put into place as the necessary support at the local level is obtained, and they will be enforced by local governments, GA DNR, GA Department of Human Resources, GA Department of Community Affairs, and the GA Forestry Commission. The regulations would utilize state-mandated environmental planning criteria, local planning and zoning ordinances, BMPs for agriculture and forestry, erosion and sedimentation measures, and septic tank permitting to manage runoff and development. The Heart of Georgia Altamaha RDC will provide technical assistance in developing a "zoning lite" ordinance to encourage local governments to implement planning and zoning measures.

Storm Water Management Regulations are planned for implementation in the future as well on a county-by-county basis. The new regulations will be put into effect as requisite local support is obtained, and the GA DNR, GA EPD, and local governments will enforce them. The regulations would utilize local ordinance enforcement to produce better erosion and sedimentation control at the time of construction. These regulations could possibly require post-construction erosion and sedimentation control and possibly utilize passive design elements in new developments and stream buffers to prevent runoff.

A Cooperative Monitoring Program is needed for future implementation. The GA DNR, GA EPD, local governments, and possibly local volunteers would conduct the program. Additional regular monitoring of Coleman's Creek is needed to better define pollutant sources. The program could also consist of a scientific study of issues such as natural dissolved oxygen levels in slow-moving South Georgia blackwater streams. It also could possibly seek funding and cooperation

for watershed assessments, including possible model demonstration assessments for small watersheds, and develop a program for implementation assessments for Coleman's Creek.

An implementation of an Adopt-A-Stream program is needed. The program would be utilized through various organizations and groups throughout the watershed. The program will provide updates on current stream conditions in the future.

Schedule for Implementation
BMPs for the agriculture and forestry community will be promoted beginning in 2002 and continuing. The schedule for implementing the Land Use Management Regulations and the Storm Water Management Regulations is on a county-by-county basis in the near future, as local support is obtained. It would be helpful if the Cooperative Monitoring Program could be implemented in 2003 pending funding. An Adopt-A-Stream Program would also be helpful if implemented by 2004, pending local support and funding.

Monitoring Plan
The GA Forestry Commission will continue to do aerial and land surveillance of the watershed area. Adopt-A-Stream monitoring will begin to take place in the future, as the requisite funding and support are developed.

Funding
The GA Forestry Commission will continue to do aerial and land surveillance of the watershed area. The U.S. Fish and Wildlife Service is funding a program called "Partners for Wildlife," which is sponsored through the GA Soil and Conservation Service. Also, some funding will originate from the USDA through the Farm Service Agency and the Natural Resource Conservation Service. The UGA Extension Service is funding two programs; Home*A*Syst and Farm*A*Syst, which are enacted by the local agriculture extension agent offices. Finally, the State Implementation Committee (SFI) is funding a program called "Sustainable Forestry Initiative." Additional funding is likely needed to establish more in-depth monitoring.

Criteria to Determine Progress
The criteria to determine whether progress toward attainment is being made will be shown through the results of future monitoring, any improved dissolved oxygen levels and lessening of oxygen depleting materials, and lower levels of fecal coliform entering Coleman's Creek.

Conclusion
Improved future utilization and implementation of best management practices at the agricultural, forestry, and urban levels will provide substantial progress in raising the level of dissolved oxygen and lowering the level of fecal coliform in

Coleman’s Creek. We anticipate the removal of Coleman’s Creek from the State of Georgia’s 303(d) list.

STATE OF GEORGIA

TMDL IMPLEMENTATION PLAN
WATERSHED APPROACH
Satilla River Basin

Local Watershed Governments

Heart of Georgia-Altamaha RDC
Appling County
Wayne County
Town of Surrency
City of Baxley

TMDL Implementation Plans are platforms for establishing a course of actions to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies.

This Implementation Plan addresses an action plan, education/outreach activities, stakeholders, pollutant sources, and potential funding sources affecting the sub-basin. In addition, the Plan describes (a) regulatory and voluntary practices/control actions (*management measures*) to reduce target pollutants, (b) milestone schedules to show the development of the management measures (*measurable milestones*), (c) a monitoring plan to determine the efficiency of the management measures and measurable milestones, and (d) criteria to determine whether substantial progress is being made towards reducing pollutants in impaired waterbodies. The overall goal of the Plan is to define a set of actions that will help achieve water quality standards in the state of Georgia. Following this section is information regarding individual segments.

Coleman's Creek Watershed
0307020203

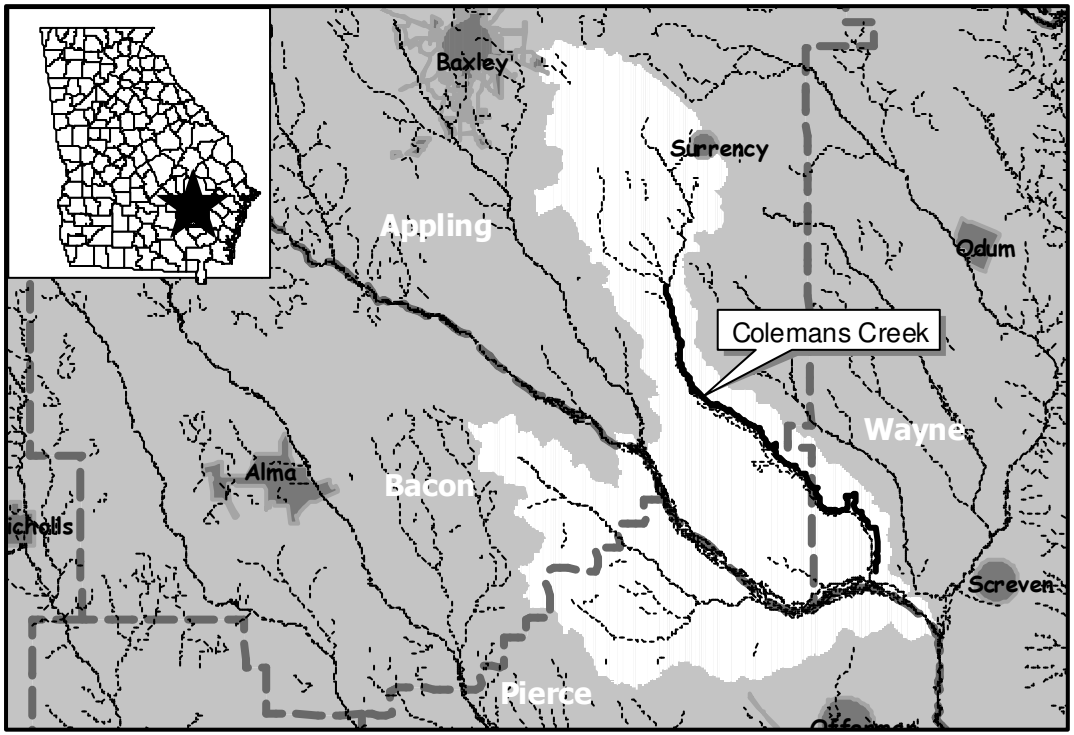


FIGURE 1

Impaired Waterbody*	Impaired Stream Location	Impairment
1.Coleman's Creek	Dry Branch south of Surrency to Big Satilla Creek near Screven	DO, FC
2.		
3.		

*These Waterbody Numbers are referenced throughout the Implementation Plan.

Action Plan for Coleman's Creek Watershed

Coleman's Creek Watershed
0307020203

POLLUTANT:	SOURCE:	EFFECT:	WHAT CAN I DO?	
			At Home: Community, School	At Work: Business, Government
X Dissolved Oxygen (DO)	__ Industrial	__ Habitat		
X Fecal Coliform (FC)	X Urban	__ Recreation		
__ Sediment	X Agriculture	__ Drinking Water		
__ Metals	X Forestry	__ Aesthetics		
__ Fish Consumption Guidelines (FCG)	X Residential	X Other (Please List) Fishing		
__ Other (Please List)	__ Other (Please List)			

INFORMATION/EDUCATION/OUTREACH ACTIVITIES

An education/outreach component will be used to enhance public understanding of and participation in implementing the TMDL Implementation Plan.
List of all previous and planned information/education/outreach activities.

Responsible Organization Or Entity	Description	Impacted Waterbodies*	Target Audience	Anticipated Dates (MM/YY)
Heart of Georgia Altamaha RDC	TMDL Presentation at the Heart of Georgia Altamaha RDC office for the committee and landowners	Coleman's Creek	Landowners with 500 Acres or more within 2 miles on either side of Coleman's Creek in Appling and Wayne counties GA, Local Governments, Agriculture Organizations, Georgia Forestry Commission, Forestry Industries, Appling Co. Farm Bureau, Altamaha Soil and Water Conservation Service, River Haven, Natural Resource Conservation Service, Seven Rivers RC & D	October 21, 2002
Heart of Georgia Altamaha RDC	Newspaper Article in Baxley News Banner Concerning Public Meeting (October 30th, 2002 Edition)	Coleman's Creek	General Public	October 30, 2002
Heart of Georgia Altamaha RDC	A Public Service Announcement to WBYZ (94.5 FM in Baxley)	Coleman's Creek	General Public	October 30- November 4, 2002
Heart of Georgia Altamaha RDC	A Public Service Announcement to WIFO (105.5 FM in Jesup)	Coleman's Creek	General Public	October 31- November 4, 2002
Heart of Georgia Altamaha RDC	TMDL Presentation for Public Meeting at the Community Center in Baxley, GA	Coleman's Creek	Landowners with 25 Acres or more within 2 miles on either side of Sweetwater Creek in Appling Co.	November 4, 2002
Heart of Georgia Altamaha RDC	TMDL Presentation at City of Baxley City Council Meeting	Coleman's Creek	City Officials	November 12, 2002
Heart of Georgia Altamaha RDC	TMDL Presentation at Appling County Commissioners Meeting	Coleman's Creek	County Officials	November 19, 2002
Heart of Georgia Altamaha RDC	TMDL Presentation at Wayne County Commissioners Meeting	Coleman's Creek	County Officials	Unknown
Heart of Georgia Altamaha RDC	TMDL Presentation at City of Screven City Council Meeting	Coleman's Creek	City Officials	Unknown
Heart of Georgia Altamaha RDC	TMDL Presentation at City of Odum City Council	Coleman's Creek	City Officials	Unknown
Heart of Georgia Altamaha RDC	TMDL Presentation at City of Jesup City Council	Coleman's Creek	City Officials	Unknown

STAKEHOLDERS

EPD encourages public involvement and the active participation of stakeholders in the process of improving water quality. Stakeholders can provide valuable information and data regarding their community and the impaired water bodies and can provide insight and/or implement management measures.

List of local governments, agricultural organizations or significant landholders, commercial forestry organizations, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

Name/Organization	Address	City	State	Zip	Phone	E-Mail
City of Baxley	PO Box 290	Baxley	GA	31513	(912)-367-8300	
Appling County Commissioners	100 Oak Street	Baxley	GA	31513	(912)-367-8100	
Appling County Farm Bureau	1850 Martin Luther King Avenue	Baxley	GA	31513	(912)-367-6661	
Appling Co. Cooperative Extension Service	PO Box 478	Baxley	GA	31513	(912)-367-8130	
GA Forestry Commission	5003 Jacksonville Hwy.	Waycross	GA	31503	(912)-287-4915	
Altamaha Soil and Water Conservation Service	7770 County Farm Road	Baxley	GA	31513	N/A	
River Haven	Route 3 Box 497B	Hortense	GA	31543	N/A	
Rayonier Forestry	1830 Golden Isles East	Baxley	GA	31515-2130	(912)-367-1548	
Natural Resource Conservation Service	239 North East Park Avenue, Suite A	Baxley	GA	31513	(912)-367-4368	
Seven Rivers RC & D	203 South Dixon Street, Suite 1	Alma	GA	31510	(912)-632-4832	
International Paper	7469 Golden Isles East	Baxley	GA	31513	(912)-367-2409	
Wayne Co. Cooperative Extension Service	1900 Sunset Blvd	Jesup	GA	31545	(912)-427-5965	
Wayne County Commissioners	341 East Walnut Street	Jesup	GA	31545	(912)-427-5900	
City of Surrency	PO Box 162	Surrency	GA	31563	(912)-367-3816	
City of Screven	PO Box 146	Screven	GA	31560	(912)-579-2231	

WATER BODIES/STREAMS COVERED IN THIS PLAN:

These impaired streams are located in the same sub-basin identified by a HUC10 code. Most of the information contained in this section comes from the 303(d) list and has been completed by employees of the EPD Water Protection Branch. Data that placed stream on 303(d) list will be provided upon request.

Waterbody Name #1	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
Coleman's Creek	Dry Branch south of Surrency to Big Satilla Creek near Screven	17	Fishing	NS

Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)
Appling	Wayne		NP

Pollutants	Water Quality Standards	Required Reduction	TMDL ID	Date TMDL Established
DO	Natural DO = 1.75 mg/l at USGS station # 22274285	Reduce oxygen demanding materials by 13 %		December 2001
FC	1000/100 ml (geometric mean Nov-April); 200/100 ml (geometric mean May-Oct)	92 %		June 2000

POLLUTANT SOURCES

It is important to recognize the potential source(s) causing water quality impairment. Each source must be controlled to comply with target TMDL/Load Allocations for each pollutant. Included is a description of how the sources contribute to the impairment and the waterbody that is impaired.

List of major nonpoint source categories and sub-categories or individual sources (Urban Runoff, Agriculture, Forestry, Municipal Sewage Treatment Plant)

Pollutant	Sources of Pollutants	Description of Contribution To Impairment	Impacted Waterbodies*
Dissolved Oxygen & Fecal Coliform	Agriculture	Possible introduction of animal waste from upslope practices and sediment from storm water runoff when BMPs are not followed	Coleman's Creek
Dissolved Oxygen & Fecal Coliform	Forestry	Possible introduction of sediment and plant debris resulting from timber practices when BMPs are not followed	Coleman's Creek
Dissolved Oxygen & Fecal Coliform	Residential	Possible introduction of discharges resulting from septic tank runoff and littering from nearby residential areas (including Surrency)	Coleman's Creek
Dissolved Oxygen & Fecal Coliform	Municipal (Storm water Runoff)	Possible introduction of storm water runoff from municipal areas (Surrency)	Coleman's Creek
Dissolved Oxygen & Fecal Coliform	Urban	Possible introduction of water runoff from urban development in and near Surrency	Coleman's Creek

MANAGEMENT MEASURES, MEASURABLE MILESTONES AND SCHEDULE

(i.e. Local codes and ordinances, Erosion and Sedimentation Control, Storm Water Management, Local water resource monitoring)

The following table lists management measures that have been or will be implemented to achieve water quality standards and the load reductions established in the TMDL. The management measures, including regulatory or voluntary actions or other controls by governments or individuals, specifically apply to the pollutant and the waterbody for which the TMDL was written. A description is provided of how these management measures are/will be accomplished through reliable and effective delivery mechanisms, and how these management measures are/will help achieve the target TMDL. Included is the source of the pollutant, anticipated/past effectiveness of the management measure (very effective, somewhat effective, not effective), the current status (i.e. enforced, in-progress, planning), and measurable milestones and schedule. Milestones are used to measure progress in attaining water quality standards and to determine whether management measures are being implemented.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Water Quality Control Act (OCGA 12-5-20)	Georgia DNR, EPD	Makes it unlawful to discharge excessive pollutants into waters of the state in amounts harmful to public health, safety or welfare, animals, or the physical destruction of stream habitat	1964	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Agriculture, Municipal, Residential, Forestry	Coleman's Creek	Effective in point source pollution in dealing with local governments and industry/ Limited effectiveness in dealing with non-point sources

Measurable Milestones	Schedule		Comments
	Start	End	
Land Use Application System Permits NPDES Permits	1964	Ongoing	Work with local governments and others to increase monitoring of Land Use Application System Permits and NPDES Permits

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Forestry Water Quality Program	Georgia Forestry Commission	Designated by EPD to lead the effort to develop BMP's, educational BMP programs, forestry complaint resolution process and BMP monitoring, conducts biennial BMP monitoring, complaint investigation and medation	1999 Manual	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Preharvesting planning, road management, harvesting, forest chemical management	Coleman's Creek	Established BMPs effective in limiting runoff associated with timber practices

Measurable Milestones	Schedule		Comments
	Start	End	
Harvesting in SMZ's, Mechanical Site Preparation, Chemical Site Preparation, Fertilization, Firebreaks, Skid Trail Stream Crossings/Road Crossings, Logging Roads	1999 Manual	Ongoing	Additional installation of BMPs possible, depending on future monitoring results

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Agricultural BMP's	Georgia Soil and Water Conservation Service, Georgia Department of Agriculture	Leads effort in agricultural water quality program, develops agricultural BMP educational and monitoring efforts	1987	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Pesticide management, animal facility runoff, irrigation water management	Coleman's Creek	Utilization of BMPs has been found to be effective in controlling runoff and other contaminations from farming practices

Measurable Milestones	Schedule		Comments
	Start	End	
Waste Storage Structure, Conservation Tillage, Waste Storage Pond, Diversion, Fencing, Field Borders, Filter Strips, Stock Trails/Walkways, Stream/Shoreline Protection, Nutrient Management, Well Protection, Land Use Application System Permits and NPDES Permits	1987	Ongoing	Additional BMPs possible depending on results of future monitoring/ Work with local governments and others to increase monitoring of Land Use Application System Permits and NPDES Permits

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Nutrient Application Plan	Natural Resource Conservation Service	Leads effort in agricultural water quality by developing plans to control nutrient runoff	2000	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Pesticide management, irrigation water management	Coleman's Creek	Effective in the initial stages of the program's beginning if plans are followed properly

Measurable Milestones	Schedule		Comments
	Start	End	
	2000	Ongoing	Plans will continue to be effective at the local level if they continue to be implemented by more and more farming establishments

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Comprehensive Nutrient Management Plan (CNMP)	Agriculture Extension Service, Department of Natural Resources	Leads effort in agricultural water quality by developing plans to control animal waste runoff	2001	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Animal facility runoff	Coleman's Creek	Effective in the initial stages of the program's beginning and if the plans are carried out properly

Measurable Milestones	Schedule		Comments
	Start	End	
	2001	Ongoing	Plans will continue to be effective at the local level if they continue to be implemented by more and more farming establishments

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Planning Act (OCGA 12-2-8)	Georgia Department of Natural Resources and Local Governments	Authorized DCA to develop minimum planning standards and procedures that local government planning and zoning jurisdictions could adopt and enforce pertaining to the protection of river corridors, mountains, water supply watersheds, groundwater recharge areas, and wetlands	1989	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Agricultural, Residential, Municipal	Coleman's Creek	Effectiveness is minimal because of lack of land use management regulations at the local level

Measurable Milestones	Schedule		Comments
	Start	End	
Land Use Management Regulations	2003	Ongoing	Need to work with local governments to establish land use management regulations and other regulations as appropriate/ Need to work with local governments in enforcing DNR's Part 5 Environmental Planning Criteria to better protect local streams

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Erosion and Sedimentation Control Act (OCGA 12-7-1)	Georgia Department of Natural Resources Environmental Protection Division and Local Governments	Authorizes local governments to adopt a comprehensive ordinance governing land-disturbing activities within local planning and zoning jurisdictions and require the use of BMPs	Amended 2000	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Agricultural, Municipal, Residential	Coleman's Creek	Effectiveness is minimal due to a lack of local enforcement of erosion and sedimentation control measures

Measurable Milestones	Schedule		Comments
	Start	End	
Local erosion and sedimentation control measures	2003	Ongoing	Work with local governments to obtain a greater enforcement of erosion and sedimentation control measures at the local level

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
NPDES (National Pollutant Discharge Elimination System) Permits	Georgia Department of Natural Resources Environmental Protection Division and Local Governments	Regulates facilities that are allowed to discharge treated wastewater into surface water	Unknown	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Municipal	Coleman's Creek	Effectiveness is greater with governments and larger industries/ Less effective with smaller entities/None Permitted

Measurable Milestones	Schedule		Comments
	Start	End	
State monitoring and renewal	2000	Ongoing	May need pubic sewage in the future for the City of Surrency

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Local Septic Tank Permit Ordinance	Georgia Department of Human Resources and Local Governments	Authorizes the regulation of septic tanks, including placement, installation and maintenance	1969	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Residential	Coleman's Creek	Effective at point of construction and poor at point of post-construction follow up maintenance

Measurable Milestones	Schedule		Comments
	Start	End	
Continuous updating of health inspector manual to upgrade current standards	1969	Ongoing	Better enforcement at local level needed

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Land Use Management Regulations	Heart of Georgia Altamaha Regional Development Center, Local Governments, Georgia Department of Natural Resources, Georgia Department of Human Resources, Georgia Department of Community Affairs, Georgia Forestry Commission	Utilize state-mandated environmental planning criteria, local planning and zoning ordinances, BMP's for agricultural and forestry, and septic tank permitting to manage runoff and development, RDC will provide technical assistance in developing a model "zoning-lite" ordinance to encourage local governments to implement planning and zoning measures	Adopted on a County-by-County basis	Planned	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Agricultural, Municipal, Residential	Coleman's Creek	Not very effective due to lack of Land Use Regulations on county-wide level

Measurable Milestones	Schedule		Comments
	Start	End	
Establishment of County-wide Land Use Regulations	2008	Ongoing	There is a need to work with local governments to adopt Land Use Regulations

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Storm water Management Regulations	Georgia Department of Natural Resources, Environmental Protection Division, and Local Governments	Utilize local ordinance enforcement to produce better erosion/sedimentation control at the time of construction, could possibly require post-construction erosion/sedimentation control, could use passive design elements in new developments and stream buffers to prevent runoff	Adopted on a County-by-County basis	Planned	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Municipal	Coleman's Creek	Limited Effectiveness due to lack of erosion and sedimentation regulations

Measurable Milestones	Schedule		Comments
	Start	End	
File for NPDES general land disturbance permit/ Phase II General Industrial Permits	2003	Ongoing	ISTEA Exemption ends for all local governments in March 2003/All cities and counties will need to file Notices of Intent by this date

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Cooperative Monitoring Program	Georgia Department of Natural Resources, Georgia Environmental Protection Division, Local Governments, Heart of Georgia Altamaha Regional Development Center	Seek a scientific study of issues such as natural dissolved oxygen levels in slow-moving streams, could seek funding/cooperation for watershed assessments including possible model demonstration assessments for small watersheds, develop a program for implementation assessments for entire Big Satilla Creek Watershed		Planned	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Agricultural, Municipal, Residential	Coleman's Creek	Anticipated effectiveness is significant because of more frequent monitoring which will produce better and more frequent data

Measurable Milestones	Schedule		Comments
	Start	End	
Implementation of Adopt-A-Stream with various organizations for purposes of more sampling/Additional monitoring to increase the amount of data collected	2003	Ongoing	Utilize monitoring programs of City of Baxley, Georgia Forestry Commission, NRCS, Adopt-A-Stream to gather updated sampling data on a more frequent basis

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Environmental Code Enforcement	Local Governments, Department of Natural Resources, Environmental Protection Division	Utilize local ordinances to ensure greater compliance with state environmental codes at the local level	2008	Planned	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Municipal, Residential	Coleman's Creek	Limited effectiveness due to lack of enforcement at county-wide level

Measurable Milestones	Schedule		Comments
	Start	End	
Establishment of code enforcement program	2008	Ongoing	Greater enforcement of state standards at the local level could help to reduce the amount of man made wastes entering into local streams

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Clean Water Act, Section 404 CFR Part 232.3 (Pine Plantation Regulations)	US EPA, Army Corps of Engineers	Requires normal forestry practices to adhere to BMPs and 15 baseline provisions for forest road construction and maintenance in and across waters of the U.S., including lakes, rivers, perennial and intermittent streams, wetlands, sloughs, and natural ponds in order to qualify for the silvicultural exemption from the permitting process	1988	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Forestry	Coleman's Creek	Significantly effective in controlling runoff in silviculture practices

Measurable Milestones	Schedule		Comments
	Start	End	
Installation of additional BMPs/Increase compliance with BMPs and education by Georgia Forestry Commission and industrial forestry companies	2008	Ongoing	Based on future monitoring results, additional BMPs may be required

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Federal Farm Bill	U.S. Department of Agriculture	Prohibits landowners from converting forested wetlands to agricultural uses (swamp buster)		Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Forestry	Coleman's Creek	Effective in leaving forested wetlands in their natural state

Measurable Milestones	Schedule		Comments
	Start	End	
Increase number of farmers utilizing incentive programs to keep forested wetlands in their natural state	1940's	Ongoing	Legislative updates should continue to increase program incentives

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Standards of Practice (OCGA 43-1-19)	Georgia State Board of Registration for Foresters	Failure to practice professional forestry in accordance with generally accepted standards of practices (includes BMPs) shall constitute unprofessional conduct and shall be grounds for disciplinary action	1993	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Forestry	Coleman's Creek	Effective in ensuring professional standards of forestry practices

Measurable Milestones	Schedule		Comments
	Start	End	
Keeping professional standards updated and enforced	1993	Ongoing	Standards need to be closely monitored and continuously enforced to ensure professional conduct

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Forestry BMPs	Georgia Forestry Commission	BMP Categories include Harvesting in SMZ's, Mechanical Site Preparation, Chemical Site Preparation, Fertilization, Firebreaks, Skid Trail Stream Crossings and Road Crossings, Logging Roads	1999	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Forestry	Coleman's Creek	Somewhat Effective

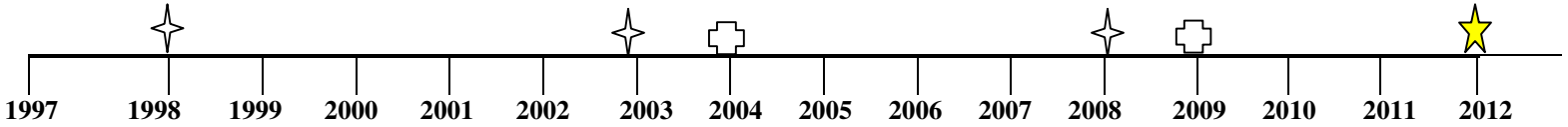
Measurable Milestones	Schedule		Comments
	Start	End	
Continuous installation of new BMPs as appropriate	1999	Ongoing	Need for monitoring of BMPs to monitor utilization and effectiveness

POTENTIAL FUNDING SOURCES The identification and discussion of dedicated funding is important in determining the economic feasibility of the above-mentioned management measures.

Funding Source	Responsible Authority	Status	Anticipated Funding Amount	Impacted Waterbodies*
Georgia Forestry Commission	Georgia Forestry Commission	Current	Unknown	Coleman's Creek
Georgia Department of Natural Resources	Environmental Protection Division	Current	$75,000.00	Coleman's Creek
U.S. Environmental Protection Agency	U.S. Environmental Protection Agency	Planned	Unknown	Coleman's Creek
U.S. Department of Agriculture	Farm Service Agency	Planned	Unknown	Coleman's Creek
U.S. Department of Agriculture	Natural Resource Conservation Service	Planned	Unknown	Coleman's Creek
U.S. Fish and Wildlife Service	Georgia Soil and Water Conservation Service ("Partners for Wildlife" Program)	Planned	Unknown	Coleman's Creek
University of Georgia Extension Service	Local Cooperative Extension Service (Home*A*Syst Program)	Planned	Unknown	Coleman's Creek
University of Georgia Extension Service	Local Cooperative Extension Service (Farm*A*Syst Program)	Planned	Unknown	Coleman's Creek
State Implementation Committee	Sustainable Forestry Initiative Program	Planned	Unknown	Coleman's Creek

PROJECTED ATTAINMENT DATE

The projected date to attain and maintain water quality standards in this watershed is 10 years from acceptance of the TMDL Implementation Plan by EPD.



EPD Monitoring
Evaluate TMDL & Attainment Date
Project Attainment

MONITORING PLAN

The purpose of this monitoring plan is to determine the effectiveness of the target TMDL and the management measures being implemented to meet water quality standards. List of previous, current or planned/proposed sampling activities or other surveys. (Monitoring data that placed stream on 303(d) list will be provided if requested.)

Name Of Regulation / Ordinance Or Management Measure	Organization	Impacted Waterbodies*	Pollutants	Purpose/Description	Time Frame		Status (Previous, Current, Proposed)
					Start	End	
1998 Survey	United States Geological Survey	Coleman's Creek	Dissolved Oxygen & Fecal Coliform	To detect the levels of dissolved oxygen and fecal coliform at the USGS Certified Station #22274285 (CR 185) for DO and Site (07024691) for FC	01/98	12/98	Previous
Best Management Practices Monitoring	Georgia Forestry Commission	Coleman's Creek	N/A	Within the watershed, can conduct monthly aerial reconnaissance to identify recent forestry practices, conduct BMP audit, and make recommendations for remediation if problems are found		On-going	Current

Coleman's Creek Watershed
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CRITERIA TO DETERMINE WHETHER SUBSTANTIAL PROGRESS IS BEING MADE

The following set of criteria will be used to determine whether any substantial progress is being made towards reducing pollutants in impaired waterbodies and attaining water quality standards. Discussion on each criteria is recorded in the space provided. Additional relevant criteria are presented in comments.

Percent of concentration or load change (monitoring program) Install BMPS and reduce the amount by 10% by 2008 when USGS monitors and by 20% by 2012

If monitoring results show that it is unlikely that the TMDL will be adequate to meet water quality standards, revision of the TMDL may be necessary.

- Categorical change in classification of the stream (delisting the stream is the goal) Classification is proposed to remain fishing/ Delist from 303(d) list

- Regulatory controls or activities installed (ordinances, laws) Work with local governments and individuals to install Erosion and Sedimentation Control, Land Use Management Regulations (Development Regulations such as stream buffers, limited impervious cover, porous pavement materials, limited clearing, grading, and disturbance); BMPs, Storm Water Management, Code Enforcement, etc. to help reduce runoff and minimize land disturbance.

- Best management practices installed (agricultural, forestry, urban) Forestry- (Harvesting in Streamside Management Zones, Mechanical Site Preparation, Chemical Site Preparation, Fertilization, Firebreaks, Skid Trail Crossing and Road Crossings, Logging Roads) Agriculture – (Waste Storage Facilities, Conservation Tillage, Waste Storage Pond, Diversion, Fencing, Field Borders, Filter Strips, Stock Trails/Walkways, Stream/Shoreline Protection, Nutrient Management, Well Protection) Urban – (Septic Tank BMPs, Storm water BMPs)

COMMENTS

Education on BMPs and direct assistance in BMP installation are keys to success/May require public sewage for Surrency in future

Attachments

Appendix A – Coleman's Creek Watershed Proposed TMDL Implementation Plan Committee Meeting Invitation List (October 21, 2002)

Appendix B – Coleman's Creek Watershed Proposed TMDL Implementation Plan List of Major Landowners Invited to Committee Meeting (October 21, 2002) (Appling and Wayne Counties)

Appendix C – Coleman's Creek Watershed Proposed TMDL Implementation Plan Committee and Major Landowners Meeting Sign-in Sheet (October 21, 2002)

Appendix D – Announcement of Public Meeting for Coleman's Creek Watershed Proposed TMDL Implementation Plan in Baxley News Banner (October 30th 2002 Edition)

Appendix E – Public Service Announcement concerning Coleman's Creek Watershed Proposed TMDL Implementation Plan given to WBYZ-FM (94.5 in Baxley/Appling County) (October 30-November 4, 2002)

Appendix F– Public Service Announcement concerning Sweetwater/Coleman's Creeks Watersheds Proposed TMDL Implementation Plan given to WIFO-FM (105.5 in Jesup/Wayne County) (October 31-November 4, 2002)

Appendix G – Stakeholder Notification List for Coleman's Creek Watershed Proposed TMDL Implementation Plan Public Meeting (November 4, 2002) (Appling County)

Appendix H – Stakeholder Notification List for Coleman's Creek Watershed Proposed TMDL Implementation Plan Public Meeting (November 4, 2002) (Wayne County)

Appendix I – Coleman's Creek Watershed Proposed TMDL Implementation Plan Public Meeting Handout (November 4, 2002)

Appendix J– Coleman's Creek Watershed Proposed TMDL Implementation Plan Public Meeting Sign-in Sheet (November 4, 2002)

Appendix K – Memo to Committee Members to Review a Preliminary Draft of the Coleman's Creek Watershed Proposed TMDL Implementation Plan for Solicitation of Comments (November 8, 2002)

Coleman's Creek Watershed
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The preparation of this report was financed in part through a grant from the U.S. Environmental Protection Agency under the provisions of Section 106 of the Federal Water Pollution Control Act, as amended.

Environmental Protection Division of the Department of Natural Resources, State of Georgia.

TOGETHER WE CAN MAKE A DIFFERENCE!